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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/008,494	11/09/2001	Kent K. Leung	CISCP206/3599	5343
22434	7590	10/04/2006	EXAMINER	
BEYER WEAVER & THOMAS, LLP			SHAH, CHIRAG G	
P.O. BOX 70250			ART UNIT	
OAKLAND, CA 94612-0250			PAPER NUMBER	
			2616	

DATE MAILED: 10/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

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Office Action Summary	Application No.	Applicant(s)	
	10/008,494	LEUNG ET AL.	
	Examiner	Art Unit	
	Chirag G. Shah	2616	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 8/7/06.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-55 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 20-41 and 50-55 is/are rejected.
- 7) ☐ Claim(s) 7-22, 31-39 and 42-49 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Arguments

1. The terminal disclaimers submitted on 8/7/06 overcomes the non-statutory double-patenting rejection with respect to claims 1 and 51-53.
2. The objection to claims 52 and 55 for reciting, “adapted for” has been withdrawn based on the amendment. **Note:** Applicant is respectfully reminded to disclose all pending and patented related applications.
3. Applicants’ amendment to claims 50 and 53 does not overcome the rejection under 35 USC 101. Claim 50 and 53, lines 1-2 state, “A computer-readable medium storing thereon computer-readable instructions for performing...”, may be changed to “A computer-readable medium storing thereon computer-readable instructions executed by a computer for performing ...”

In order for the claimed subject matter to comply with the subject matter eligibility requirement of 35 U.S.C. 101, the above mentioned must be changed. According to Annex IV of the Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility, Nonfunctional descriptive material does not constitute a statutory process, machine, manufacture or composition of matter and should be rejected under 35 U.S.C. 101. Nonfunctional descriptive material may be claimed in combination with other functional descriptive multi-media material on a computer-readable medium to provide the necessary functional and structural interrelationship to satisfy the requirements of 35 U.S.C. 101.

4. Applicant's arguments filed 8/7/06 with respect to claims 1, 23 and 26 have been fully considered but they are not persuasive.

Regarding claims 1 and 23, Applicant argues that a multicast message is a specific type of message that may be sent to a group (e.g. virtual router group) and U.S. Patent No. 6195705 (Leung reference) neither discloses nor suggests sending a multicast message, nor does it disclose or suggest sending such a message to a virtual router group, where the message notifies the virtual router group of the registration. Examiner respectfully disagrees and redirects Applicant to Leung reference, specifically to col. 12, lines 33-45, where Leung clearly discloses that the invention could also be applied in the case of multiple Home Agents, who are kept up to date on registration changes by multicast messages. Furthermore, in combination with claim 12, lines 7-10 clearly suggests and implies that in the multicast scenario, sending multicast messages notifying of the registration to which the active and standby mobility agents sharing the virtual IP address are known to the mobile node. Thus, in the case of multicasting as suggested above, the active mobility agents and the standby mobility agents sharing a virtual IP address is the (virtual router group), which is known to the mobile node. Thus, claims 1 and 23 respectfully remain unpatentable over the cited art.

Regarding claim 26, Applicant argues that U.S. Patent No. 6,195,705 (Leung reference) neither discloses nor suggests sending a multicast message to a redundancy group. For similar reasons as above, although the preferred embodiment of the invention applies to unicast messages, Examiner respectfully disagrees and redirects Applicants to Leung reference, specifically to col. 12, lines 33-45, where Leung clearly discloses that the invention could also be applied in the case of multiple Home Agents, who are kept up to date on registration changes by

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multicast messages. Thus, in combination of above with the disclosure in col. 4, lines 55-col. 5, lines 13 and col. 16, lines 18-19 applied in the multicast case suggests, of sending a multicast message using the all-routers IP multicast address 224.0.0.2. Thus, claim 26 respectfully remains unpatentable over the cited art.

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Claim Objections

5. Claims 51 and 54 objected to because of the following informalities: In claim 51, line 4 and claim 54, line 5. Under MPEP 2106, pages 2100-8, "language that suggests or makes optional but does not require steps to be performed or does not limit a claim to a particular structure does not limit the scope of a claim or claim limitation. Appropriate correction is required.

Claim Rejections - 35 USC § 101

6. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

7. Claims 50 and 53 rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.

Claim 50 recites, “A computer-readable medium storing thereon computer-readable instructions for performing a method of maintaining Mobile IP operation in a Home Agent...instructions...registration.” Computer programs claimed as computer listings per se, i.e., the descriptions or expression of the program, are not physical “things.” They are neither computer components nor statutory processes, as they are not “acts” being performed. Such claimed computer programs do not define any structural and function interrelationships between the computer program and other claimed elements of a computer, which permit the computer program’s functionality to be realized. In contrast, according the Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility, page 53, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and function interrelationships between the computer program and the rest of the computer which permit the computer program’s functionality to be realized, and is thus statutory.

Claim 53 recites, "A computer-readable medium storing thereon computer-readable instructions for providing Mobile IP redundancy in a Home Agent...instructions...reply messages." Computer programs claimed as computer listings per se, i.e., the descriptions or expression of the program, are not physical "things." They are neither computer components nor statutory processes, as they are not "acts" being performed. Such claimed computer programs do not define any structural and function interrelationships between the computer program and other claimed elements of a computer, which permit the computer program's functionality to be realized. In contrast, according the Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility, page 53, a claimed computer-readable medium encoded with a computer program is a computer element which defines structural and function interrelationships between the computer program and the rest of the computer which permit the computer program's functionality to be realized, and is thus statutory.

Claim Rejections - 35 USC § 102

8. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

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9. Claims 1-6, 23-30, 52 and 55 rejected under 35 U.S.C. 102(e) as being anticipated by Leung (U.S. Patent No. 6,195,705)

The applied reference has a common assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 102(e) might be overcome either by a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not the invention "by another," or by an appropriate showing under 37 CFR 1.131.

Regarding claims 1 and 52, Leung discloses in a Home Agent, a method of maintaining Mobile IP operation, the method [see claim 12, lines 1-2, U.S. Patent No. 6,195,705] comprising:

registering a Mobile Node [see claim 12, line 4, U.S. Patent No. 6,195,705];

creating a registration entry for the Mobile Node in a mobility binding table [see claim 12, lines 5-6, U.S. Patent No. 6,195,705; the registration entry for the mobile node must be performed in the binding table]; and

sending a multicast message to a virtual router group to which the Home Agent belongs and with which the Home Agent shares a virtual IP address, the multicast message notifying the virtual router group of the registration [see claim 12, lines 7-10, U.S. Patent No. 6,195,705; both claims primarily suggest of the active Mobility/Home Agent on a network segment sending a message to an additional device(s) sharing the virtual IP address; Leung clearly discloses in col. 12, lines 33-45 that the invention could also be applied in the case of

multiple Home Agents, who are kept up to date on registration changes by multicast messages. Furthermore, in combination with claim 12, lines 7-10 clearly suggests and implies that in the multicast scenario, sending multicast messages notifying of the registration to which the active and standby mobility agents sharing the virtual IP address are known to the mobile node. Thus, in the case of multicasting as suggested above, the active mobility agents and the standby mobility agents sharing a virtual IP address is the (virtual router group), which is known to the mobile node].

Regarding claims 2 and 27, Home Agent is not active [see claim 2, U.S. Patent No. 6195705].

Regarding claims 3 and 28, Home Agent is in a standby [see claim 2, U.S. Patent No. 6195705].

Regarding claims 4 and 29, Home Agent is in an active state [see claim 12, U.S. Patent No. 6195705].

Regarding claims 5 and 30, Home Agent is in a passive state [see claim 2, U.S. Patent No. 6195705].

Regarding claim 6, further comprising: registering a mobile node is performed in response to receiving a registration request from the mobile node [see col. 1, lines 64 to col. 2, line 19].

Regarding claim 23 Leung discloses in a Home Agent, a method of maintaining Mobile IP operation, the method [see claim 12, lines 1-2, U.S. Patent No. 6,195,705] comprising:

De-registering a Mobile Node [see figure 4, col. 10, lines 26-56, claim 12, line 4, U.S. Patent No. 6,195,705];

creating a registration entry for the Mobile Node in a mobility binding table [see claim 12, lines 5-6, U.S. Patent No. 6,195,705; the registration entry for the mobile node must be performed in the binding table]; and

sending a multicast message to a virtual router group to which the Home Agent belongs and with which the Home Agent shares a virtual IP address, the multicast message notifying the virtual router group of the registration [see claim 12, lines 7-10, U.S. Patent No. 6,195,705; both claims primarily suggest of the active Mobility/Home Agent on a network segment sending a message to an additional device(s) sharing the virtual IP address. Leung clearly discloses in col. 12, lines 33-45 that the invention could also be applied in the case of multiple Home Agents, who are kept up to date on registration changes by multicast messages. Furthermore, in combination with claim 12, lines 7-10 clearly suggests and implies that in the multicast scenario, sending multicast messages notifying of the registration to which the active and standby mobility agents sharing the virtual IP address are known to the mobile node. Thus, in the case of multicasting as suggested above, the active mobility agents and the standby mobility agents sharing a virtual IP address is the (virtual router group), which is known to the mobile node].

Regarding claims 24 and 40, wherein the Home Agent implements a routing redundancy protocol [see col. 4, lines 5-15].

Regarding claim 25 and 41, wherein the routing redundancy protocol is HSRP [see col. 4, lines 5-15].

Regarding claims 26 and 55, Leung discloses in claim 1, lines 1-2 in a Home Agent being a member of a redundancy group including one or more Home Agents, a method of providing Mobile IP redundancy, the method comprising:

 sending a multicast mobility binding table request to the redundancy group indicating that bindings present in a mobility binding table maintained by one or more members of the redundancy group are requested [see col. 4, lines 55 to col. 5, lines 13; In addition, although the preferred embodiment of the invention applies to unicast messages, Leung clearly discloses col. 12, lines 33-45 that the invention could also be applied in the case of multiple Home Agents, who are kept up to date on registration changes by multicast messages. Thus, in combination of above with the disclosure in col. 4, lines 55-col. 5, lines 13 and col. 16, lines 18-19 applied in the multicast case suggests, of sending a multicast message using the all-routers IP multicast address 224.0.0.2];

 receiving one or more reply messages including one or more bindings associated with one or more mobile nodes [see fig. 4, sending reply message with binding table]; and

 updating a mobility binding table maintained by the Home Agent with the bindings received in the reply messages [see col. 4 lines 26-56 and fig 4, Home Agent updates the mobile node entry in its binding table].

Allowable Subject Matter

10. Claims 7-22, 31-39 and 42-49 objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chirag G. Shah whose telephone number is 571-272-3144. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Doris To can be reached on 571-272-7682. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

cgs
September 22, 2006



Chirag Shah
Patent Examiner, 2616